

BRENELL SOLID STATE TAPE LINK

Installation and Operating Instructions

GENERAL INFORMATION

This Tape Link is designed for use with Tape Decks having the following head assemblies:-

		<u>Erase</u>	<u>Record</u>	<u>Replay</u>
2/2 Track	Type	UL290	UK202	UK202
2/4 Track	Type	UL296	UK207	UK207

and any type of stereo amplifier capable of supplying a signal level for recording purposes of 8 millivolts per channel (See Note on A/B Balancing). To take full advantage of the facilities available, the associated amplifier should have "tape monitoring" switching. (Should the amplifier not be so designed, a minor modification can usually be incorporated - consult the amplifier's manufacturer as to the feasibility of modification).

Whilst signals will normally be fed to the Tape Link from the associated amplifier and these connections will be made at the rear of the unit, sockets are provided on the front panel to enable microphones and other signal sources - e.g. from another tape recorder, to be used.

Mixing facilities are provided between microphones and auxiliary signals. The output sockets are duplicated on the front panel to enable your recordings to be fed to equipment other than the associated amplifier which will be rear connected.

COUPLING TAPE DECK WITH TAPE LINK

The multiple cables from the Tape Deck will terminate in 2 plugs - an 11-pin type for connection to the rear of the Tape Link and an 8-pin type for connection to the power unit. In addition there will be two single screened leads from the Replay head - Red terminating plug for Upper Track and Green plug for bottom track - for connection to the appropriate sockets at the rear of the Tape Link.

The power unit cable terminated in a 3-pin plug is for connection to the appropriate socket on the rear of the Tape Link.

The mains cable (Brown - Live: Blue - Neutral: Green/Yellow - Earth) enters the extreme L.H. hole (viewed from rear) of the Tape Link.

A suitable mains plug should be attached to this cable in readiness for plugging into the mains socket.

COUPLING STEREO AMPLIFIER TO TAPE LINK

Four sockets will remain unused after the Deck, Link and Power Unit have been coupled together, these are for the signals from the Stereo Amplifier (which are to be recorded) and the signals from the Tape Link after recording has taken place.

Using screened cable, connect the upper track input socket (extreme R.H. upper socket) of the Tape Link to the Left Hand output signal from the Amplifier and the lower track input socket to the Right Hand Amplifier output.

Again using screened cable, couple the tape output sockets of the Tape Link to the tape input sockets of the stereo amplifier - upper track to left hand and lower track to right hand.

All the connections involving Deck, Tape Link and Power Unit and Amplifier are now completed - your normal signal sources (Radio, etc., etc.) and Loudspeakers are assumed to have been connected to the Stereo Amplifier.

OPERATING INSTRUCTIONSSTEREO RECORDING ON 2/2 TRACK MODELS

1. Connect Tape Link to Mains supply and check that power is available by pressing the on/off (extreme right hand) button of the Link. Meters will be illuminated when power is applied.
Leave in the off position for the time being.

2. Set up the other buttons on the Link:-

Press	Aux.
"	A
"	Frequency Correction to match deck speed.
"	Recording Mode (stereo)

3. Turn all 8 variable controls fully anti-clockwise.

4. Lace tape on Deck and select speed to be used.

5. Switch on your stereo amplifier and operate it in the normal manner with Radio, Gram pickup, etc.

6. Switch stereo amplifier to tape monitoring (this will cut off signals from your loudspeakers).

7. Press on/off switch of Tape Link (meters will be illuminated).

8. Turn clockwise both output volume controls (right hand side of front panel) until an adequate sound level is reached.

Note - you will now be listening to your 'original' signals prior to them being recorded and before they are applied to the recording amplifiers.

9. Switch Tape Deck to record position.

10. Rotate both "Record" controls until peak signals cause the needles to rise to the 0dB marks on the meter scales (beginning of red sections).

11. Press 'B' button - the recorded sound will then be heard.

12. Adjust A/B balance controls to give the same level of output with 'B' button pressed as is obtained with the 'A' button pressed.

Alternate pressing of the A and B buttons whilst making the adjustments will be necessary, the object being to obtain a recording as identical as possible to the original sound.

A/B balancing is easily attainable with input signals having levels between 80 mVs and 650mVs (at the rear input sockets). It should be noted that lower levels of signal than 80 mVs can be adequately recorded but the signal level from the tape will be greater than that which is passed straight through ('A' button pressed) the amplifier.

Conversely higher signal levels than 650mVs into the rear sockets will be greater in A position than the levels available from the Tape in B position.

The full width of the tape will have been used for the 2/2 track stereo recording, therefore do NOT turn the reels over and attempt further recordings. (See Notes on 2/4 track models).

Ref. 9 and 10 above - The deck, after being switched to Record may be "PAUSED" whilst the Recording Level Controls are being adjusted.
The tape must, of course, be in motion before recording can take place.

MONO RECORDING ON 2/2 TRACK MODELS

Selection of the appropriate input sockets and recording mode will enable mono recordings to be made on either track, e.g. signals into upper track input sockets and upper recording mode button pressed will ensure that recording takes place on the upper edge of the tape OR signals into lower track input sockets and lower recording mode button pressed for recording on the lower edge of the tape.

To record to international standards (tape replayable on any mono machine) use only the upper track, turning the tape over for the second recording.

Only the one output channel associated with the track selected will carry the recorded signal, therefore the other channel's output volume control must be turned down.

Apart from selecting the recording mode and input channels, recording procedure will be as outlined in the Stereo Recording Instructions.

REPLAY ONLY - PRESS BUTTON B

Place tape on deck in the normal manner

Switch deck to REPLAY

Advance A/B balance controls to maximum.

Adjust output volume controls for desired signal level

Mono Replay - Turn down output volume control of channel not required.

2/4 TRACK MODELS - STEREO

The heads used on these models enable four mono or two stereo recordings to be made.

Recording and Replay procedure are exactly as for 2/2 track but to obtain the second stereo recording, the reel of tape must be turned over, e.g. with a new reel of tape make a stereo recording according to 2/2 track recording instructions. At the end of this recording the R/H reel will hold the tape, if this reel is now turned over it will be ready for transference to the L.H. spoolholder for recording to continue using the two tracks so far unused. (No further adjustment of Tape Link controls is necessary).

2/4 TRACK MODELS - MONO

To Record on track 1 - Press upper record mode button, feed signals into upper track input sockets and adopt normal recording procedure.

To Record on Track 4 (Tape now wound on to take-up reel) TURN TAPE OVER
Proceed as for track 1.

To Record on Track 3 (Tape on original reel as when recording track 1)
Press lower record mode button, feed signals into lower track input sockets and adopt normal recording procedure.

To Record on Track 2 (Tape on take-up reel) TURN TAPE OVER and proceed as for track 3.

REPLAY 2/4 TRACK MONO - PRESS BUTTON B

With tape on original reel, tracks 1 and 3 will be available (1 upper and 3 lower track) whilst with tape on take-up reel tracks 4 (upper) and 2 will be available.

Turn down the output volume control of the track which is not required.

FRONT PANEL SOCKETS

Aux - Alternative sockets to the tape input sockets at the rear of the Tape Link.

When used, the rear sockets will automatically be switched out of circuit. The sensitivities at these sockets are 6mV into 250K ohms impedance. (A/B Balance from 35mV to 300mV input levels)

'Aux' button must be pressed to bring these sockets into use.

Mic

Two sockets are provided to enable microphones to be used directly into the Tape Link. (Optimum mic impedance 200 ohms).

Press Mic button to bring these sockets into circuit.

When using microphones, the output volume controls must be turned down to avoid feedback. (The associated amplifier could be switched off when recording from Mics).

Mixing

To mix mic. signals and Aux signals (from front or rear sockets), press both Aux and Mic buttons. This action will bring into circuit the Mixer Control which gives cross-fading of the two inputs e.g. as one signal is increased the other is decreased. Headphones should be used (plugged into output sockets) when mixing. (Phone impedance 60 ohms or higher).

IMPORTANT POINTS TO REMEMBERCAUTION

Before switching Tape Deck to the Record mode, ensure that you have selected the Mono or Stereo condition required. (Erasure operates on both tracks if the stereo button is pressed.

To record $\frac{1}{2}$ track mono to international standards, the upper track selector button must be pressed and the tape turned over for the second recording. With $\frac{2}{4}$ track heads, the upper button must be pressed for $\frac{1}{4}$ track mono recordings on track 1 or 4 and the lower button must be pressed for track 2 or 3.

The meters will not operate unless the deck is switched to the record mode - the tape movement on a Brenell Mark 6 deck may be immediately arrested if the pause control is moved to the full extent of its movement.

If good quality recordings are to be made, it is essential that the tape be fully and correctly modulated as indicated by the meter readings rising to 0dB points on peak levels.

Do not reduce the output volume levels by reducing the recording levels.

Volume controls which automatically reduce both original and off-tape signal levels are provided - these are the extreme right hand controls, marked 'volume'.

HUM

Should an excessive hum to signal ratio be encountered, it should be noted that too many earth leads will introduce what is termed a "hum loop". The clearance of a "hum loop" is achieved only by experimenting with the removal of earth connections. If the associated amplifying equipment is earthed, the Tape Link and Deck will also be earthed by means of the screened cables coupling the various pieces of equipment, therefore, the earth lead (green/yellow in the Tape Link mains cable) may have to be disconnected from the 3-pin power plug to prevent a "hum loop". Hum may be picked up from the transformers of associated equipment (usually by the playback head), it is therefore important to ensure that units with transformers are carefully sited to minimise the effect of the A.C. fields produced by the transformers. To ensure that the optimum position has been selected, switch on all equipment (Tape Link 'B' button pressed) and if hum is present (no signals, should be fed into it during this operation), move power units or units with mains transformers on them into positions where the least hum is induced into the heads. (Often the rotation of a power unit is all that is required to accomplish this objective).